In the Claims:

1 – 18. (Cancelled).

19. (Currently Amended) A method, comprising the steps of:

monitoring a heartbeat of an exerciser during a non-stationary exercise;

determining whether an average heartbeat rate of a first heart rate variability cycle, which is a rate at which the heartbeat [[rate]] changes during a first level of exercise, is stable; and

in response to determining whether the average heartbeat rate of the first heart rate variability cycle is stable:

detecting positive heartbeat rate peaks of the first heart rate variability cycle;

detecting negative heartbeat rate peaks of the first heart rate variability cycle;

providing an exhale signal at the positive heartbeat rate peaks of the first heart rate variability cycle to instruct the exerciser to begin exhaling; and

providing an inhale signal at the negative heartbeat rate peaks of the first heart rate variability cycle to instruct the exerciser to begin inhaling [[;]] .

20. (Currently Amended) The method of claim 19 further comprising the step of providing a signal to the exerciser signaling when the average heartbeat rate of the first heart rate variability cycle is stable.

21. (Currently Amended) The method of claim 19 further comprising the step of providing a signal to the exerciser signaling when the average heartbeat rate of the first heart rate variability cycle is unstable.

22. (Currently Amended) The method of claim 19 further comprising the step of instructing the exerciser to obtain a stable stability of the first heart rate variability cycle before beginning the non-stationary exercise.

23. (Previously Presented) The method of claim 19 further comprising the step of determining an exercise tempo and providing a tempo signal instructing the exerciser to exercise at the exercise tempo.

24.   (Previously Presented) The method of claim 23 wherein the inhale and the exhale signals are not provided to the exerciser when the exercise tempo is transitioning from a first tempo to a second tempo.

25.   (Previously Presented) The method of claim 19 wherein the inhale and the exhale signals are not provided to the exerciser when an exercise tempo is transitioning from a first tempo to a second tempo.

26.   (Currently Amended) The method of claim 19 further comprising the step of generating a tempo based on the first heart rate variability cycle and providing a tempo signal based on the tempo to the exerciser so that the exerciser can synchronize the exerciser's ~~their non-stationary~~ exercise with the tempo.

27.   (Currently Amended) The method of claim 19 wherein at least one of the inhale and exhale signals [[are]] is a signal selected from [[the]] a group consisting of an audio signal, a visual signal, and a tactile signal.

28.   (Currently Amended) The method of claim 19 wherein the inhale and exhale signals correspond to a breathing cycle that is coherent with the first heart rate variability cycle when the exerciser consciously synchronizes breathing with the ~~breathing cycle~~ first heart rate variability cycle.

29.   (Withdrawn) A system, comprising:
        a heartbeat monitor adapted to monitor a heartbeat of an exerciser during a non-stationary exercise;
        a heartbeat stability detector adapted to determine a heart rate variability cycle, which is a rate at which the heartbeat rate changes;
        a heartbeat peak rate detector adapted to:
                detect positive heartbeat rate peaks of the heart rate variability cycle; and
                detect negative heartbeat rate peaks of the heart rate variability cycle; and

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a signal generator adapted to:

      provide an exhale signal at the positive heartbeat rate peaks to instruct the exerciser to begin exhalation; and

      provide an inhale signal at the negative heartbeat rate peaks to instruct the exerciser to begin inhalation;

30.   (Withdrawn) The system of claim 29 wherein the heartbeat stability detector is further adapted to provide a signal to the exerciser to signal when the heart rate variability cycle is stable.

31.   (Withdrawn) The system of claim 29 wherein the heartbeat stability detector is further adapted to provide a signal to the exerciser to signal when the heart rate variability cycle is unstable.

32.   (Withdrawn) The system of claim 29 wherein the signal generator is further adapted to instruct the exerciser to obtain a stable heart rate variability cycle before beginning the non-stationary exercise.

33.   (Withdrawn) The system of claim 29 wherein the signal generator is further adapted to determine an exercise tempo and provide a tempo signal to instruct the exerciser to exercise at the exercise tempo.

34.   (Withdrawn) The system of claim 33 wherein the signal generator is further adapted to not provide the inhale and the exhale signals for the exerciser when the exercise tempo transitions from a first tempo to a second tempo.

35.   (Withdrawn) The system of claim 29 wherein the signal generator is further adapted to not provide the inhale and the exhale signals for the exerciser when an exercise tempo transitions from a first tempo to a second tempo.

36. (Withdrawn) The system of claim 29 wherein the signal generator is further adapted to generate a tempo based on the heart rate variability cycle and provide a tempo signal based on the tempo to the exerciser so that the exerciser can synchronize their non-stationary exercise with the tempo.

37. (Withdrawn) The system of claim 29 wherein at least one of the inhale and exhale signals are a signal selected from the group consisting of an audio signal, a visual signal, and a tactile signal.

38. (Withdrawn) The system of claim 29 wherein the inhale and exhale signals correspond to a breathing cycle that is coherent with the heart rate variability cycle when the exerciser consciously synchronizes breathing with the breathing cycle.

39. (New) The method of claim 19 further comprising instructing the exerciser to synchronize body movements with the inhaling and exhaling.

40. (New) The method of claim 19 further comprising determining, in response to determining whether the average heartbeat rate of the first heart rate variability cycle is unstable, that the exerciser is transitioning from the first level of exercise to a second level of exercise.

41. (New) The method of claim 40 wherein, in response to determining that the exerciser is transitioning from the first level of exercise to a second level of exercise, the inhale signal and the exhale signal are not provided to the exerciser.

42. (New) The method of claim 40 further comprising determining whether an average heartbeat rate of a second heart rate variability cycle, which is a rate at which the heartbeat changes during the second level of exercise, is stable.

43. (New) The method of claim 42 further comprising, in response to determining whether the average heartbeat rate of the second heart rate variability cycle is stable,

    detecting positive heartbeat rate peaks of the second heart rate variability cycle;

detecting negative heartbeat rate peaks of the second heart rate variability cycle;

providing the exhale signal at the positive heartbeat rate peaks of the second heart rate variability cycle to instruct the exerciser when to begin exhaling; and

providing the inhale signal at the negative heartbeat rate peaks of the second heart rate variability cycle to instruct the exerciser when to begin inhaling.